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PTO/SB/05 (03-01)

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# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. 1.53(b))

Attorney Docket No. 262/091

First Inventor Heng-Yu Jian, et al.

Title REDUCING THE PEAK-TO-AVERAGE POWER  
RATIO OF A COMMUNICATION SIGNAL

Express Mail Label No. EL844592480US

10096 U.S.P.T.O.  
06/25/01

<b>APPLICATION ELEMENTS</b>		<b>ADDRESS TO:</b>	
See MPEP chapter 600 concerning utility patent application contents.		Commissioner for Patents Box Patent Application Washington, DC 20231	
1. <input checked="" type="checkbox"/> Fee Transmittal Form (e.g., PTO/SB/17) <i>(Submit an original and a duplicate for fee processing)</i>		7. <input type="checkbox"/> CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)	
2. <input type="checkbox"/> Applicant claims small entity status. <i>See 37 CFR 1.27.</i>		8. Nucleotide and/or Amino Acid Sequence Submission <i>(if applicable, all necessary)</i>	
3. <input checked="" type="checkbox"/> Specification [Total Pages 36] <i>(preferred arrangement set forth below)</i> <ul style="list-style-type: none"> <li>- Descriptive title of the Invention</li> <li>- Cross Reference to Related Applications</li> <li>- Statement Regarding Fed sponsored R &amp; D</li> <li>- Reference to sequence listing, a table, or a computer program listing appendix</li> <li>- Background of the Invention</li> <li>- Brief Summary of the Invention</li> <li>- Brief Description of the Drawings (<i>if filed</i>)</li> <li>- Detailed Description</li> <li>- Claim(s)</li> <li>- Abstract of the Disclosure</li> </ul>		a. <input type="checkbox"/> Computer Readable Form (CRF) b. Specification Sequence Listing on: <ul style="list-style-type: none"> <li>i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or</li> <li>ii. <input type="checkbox"/> paper</li> </ul> c. <input type="checkbox"/> Statements verifying identity of above copies	
4. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) [Total Sheets 9]		9. <input type="checkbox"/> Assignment Papers (cover sheet & document(s))	
5. Oath or Declaration [Total Pages ]		10. <input type="checkbox"/> 37 C.F.R. §3.73(b) Statement <input type="checkbox"/> Power of <i>(when there is an assignee)</i> Attorney	
a. <input type="checkbox"/> Newly executed (original or copy) b. <input type="checkbox"/> Copy from a prior application (37 CFR 1.63 (d)) <i>(for a continuation/divisional with Box 18 completed)</i>		11. <input type="checkbox"/> English Translation Document ( <i>if applicable</i> )	
i. <input type="checkbox"/> <b>DELETION OF INVENTOR(S)</b> <i>Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).</i>		12. <input type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 <input type="checkbox"/> Copies of IDS Citations	
6. <input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76		13. <input type="checkbox"/> Preliminary Amendment 14. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) <i>(Should be specifically itemized)</i> 15. <input type="checkbox"/> Certified Copy of Priority Document(s) <i>(if foreign priority is claimed)</i> 16. <input type="checkbox"/> Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent 17. <input checked="" type="checkbox"/> Other: Certificate of Mailing (37 C.F.R. § 1.10); Appendix A; and Lyon & Lyon Check No. 14234 for \$1,678.00	

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

Continuation     Divisional     Continuation-in-part (CIP)

of prior application No: \_\_\_\_\_ /

Group / Art Unit: \_\_\_\_\_

Prior application information: Examiner \_\_\_\_\_  
**For CONTINUATION or DIVISIONAL APPS only:** The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 17. CORRESPONDENCE ADDRESS

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<b>Name</b>	Robert S. Mayer, Esq. <b>22249</b> <b>PATENT TRADEMARK OFFICE</b>					
	Lyon & Lyon, LLP 633 West Fifth Street, Suite 4700					
<b>Address</b>						
<b>City</b>	Los Angeles		<b>State</b>	California	<b>Zip Code</b>	90071-2066
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<b>Name (Print/Type)</b>		Robert S. Mayer		<b>Registration No. (Attorney/Agent)</b>		38,544
<b>Signature</b>				<b>Date</b>		June 25, 2001

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WP-14667.1

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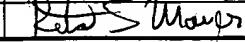
# FEE TRANSMITTAL for FY 2001

Patent fees are subject to annual revision.

TOTAL AMOUNT OF PAYMENT (\$ 1,678.00)

Complete if Known	
Application Number	
Filing Date	June 25, 2001
First Named Inventor	Heng-Yu Jian, et al.
Examiner Name	
Group / Art Unit	
Attorney Docket No.	262/091

METHOD OF PAYMENT (check one)					FEE CALCULATION (continued)																																																																																																																																																																																														
<p>1. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:</p> <p>Deposit Account Number <span style="border: 1px solid black; padding: 2px;">12-2475</span></p> <p>Deposit Account Name <span style="border: 1px solid black; padding: 2px;">Lyon &amp; Lyon</span></p> <p><input checked="" type="checkbox"/> Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17</p> <p><input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27</p>					<p><b>3. ADDITIONAL FEES</b></p> <table border="1"> <thead> <tr> <th>Fee Code</th> <th>Large Entity Fee (\$)</th> <th>Small Entity Fee Code</th> <th>Small Entity Fee (\$)</th> <th>Fee Description</th> <th>Fee Paid</th> </tr> </thead> <tbody> <tr><td>105</td><td>130</td><td>205</td><td>65</td><td>Surcharge - late filing fee or oath</td><td></td></tr> <tr><td>127</td><td>50</td><td>227</td><td>25</td><td>Surcharge - late provisional filing fee or cover sheet</td><td></td></tr> <tr><td>139</td><td>130</td><td>139</td><td>130</td><td>Non-English specification</td><td></td></tr> <tr><td>147</td><td>2,520</td><td>147</td><td>2,520</td><td>For filing a request for reexamination</td><td></td></tr> <tr><td>112</td><td>920*</td><td>112</td><td>920*</td><td>Requesting publication of SIR prior to Examiner action</td><td></td></tr> <tr><td>113</td><td>1,840*</td><td>113</td><td>1,840*</td><td>Requesting publication of SIR after Examiner action</td><td></td></tr> <tr><td>115</td><td>110</td><td>215</td><td>55</td><td>Extension for reply within first month</td><td></td></tr> <tr><td>116</td><td>390</td><td>216</td><td>195</td><td>Extension for reply within second month</td><td></td></tr> <tr><td>117</td><td>890</td><td>217</td><td>445</td><td>Extension for reply within third month</td><td></td></tr> <tr><td>118</td><td>1,390</td><td>218</td><td>695</td><td>Extension for reply within fourth month</td><td></td></tr> <tr><td>128</td><td>1,890</td><td>228</td><td>945</td><td>Extension for reply within fifth month</td><td></td></tr> <tr><td>119</td><td>310</td><td>219</td><td>155</td><td>Notice of Appeal</td><td></td></tr> <tr><td>120</td><td>310</td><td>220</td><td>155</td><td>Filing a brief in support of an appeal</td><td></td></tr> <tr><td>121</td><td>270</td><td>221</td><td>135</td><td>Request for oral hearing</td><td></td></tr> <tr><td>138</td><td>1,510</td><td>138</td><td>1,510</td><td>Petition to institute a public use proceeding</td><td></td></tr> <tr><td>140</td><td>110</td><td>240</td><td>55</td><td>Petition to revive – unavoidable</td><td></td></tr> <tr><td>141</td><td>1,240</td><td>241</td><td>620</td><td>Petition to revive – unintentional</td><td></td></tr> <tr><td>142</td><td>1,240</td><td>242</td><td>620</td><td>Utility issue fee (or reissue)</td><td></td></tr> <tr><td>143</td><td>440</td><td>243</td><td>220</td><td>Design issue fee</td><td></td></tr> <tr><td>144</td><td>600</td><td>244</td><td>300</td><td>Plant issue fee</td><td></td></tr> <tr><td>122</td><td>130</td><td>122</td><td>130</td><td>Petitions to the Commissioner</td><td></td></tr> <tr><td>123</td><td>130</td><td>123</td><td>130</td><td>Petitions related to provisional applications</td><td></td></tr> <tr><td>126</td><td>180</td><td>126</td><td>180</td><td>Submission of Information Disclosure Stmt</td><td></td></tr> <tr><td>581</td><td>40</td><td>581</td><td>40</td><td>Recording each patent assignment per property (times number of properties)</td><td></td></tr> <tr><td>146</td><td>710</td><td>246</td><td>355</td><td>Filing a submission after final rejection (37 CFR § 1.129(a))</td><td></td></tr> <tr><td>149</td><td>710</td><td>249</td><td>355</td><td>For each additional invention to be examined (37 CFR § 1.129(b))</td><td></td></tr> <tr><td>179</td><td>710</td><td>279</td><td>355</td><td>Request for Continued Examination (RCE)</td><td></td></tr> <tr><td>169</td><td>900</td><td>169</td><td>900</td><td>Request for expedited examination of a design application</td><td></td></tr> <tr> <td colspan="5">Other fee (specify)</td> <td></td> </tr> <tr> <td colspan="5">*Reduced by Basic Filing Fee Paid</td> <td>SUBTOTAL (3) <span style="border: 1px solid black; padding: 2px;">(\$ 0)</span></td> </tr> </tbody> </table>					Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid	105	130	205	65	Surcharge - late filing fee or oath		127	50	227	25	Surcharge - late provisional filing fee or cover sheet		139	130	139	130	Non-English specification		147	2,520	147	2,520	For filing a request for reexamination		112	920*	112	920*	Requesting publication of SIR prior to Examiner action		113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action		115	110	215	55	Extension for reply within first month		116	390	216	195	Extension for reply within second month		117	890	217	445	Extension for reply within third month		118	1,390	218	695	Extension for reply within fourth month		128	1,890	228	945	Extension for reply within fifth month		119	310	219	155	Notice of Appeal		120	310	220	155	Filing a brief in support of an appeal		121	270	221	135	Request for oral hearing		138	1,510	138	1,510	Petition to institute a public use proceeding		140	110	240	55	Petition to revive – unavoidable		141	1,240	241	620	Petition to revive – unintentional		142	1,240	242	620	Utility issue fee (or reissue)		143	440	243	220	Design issue fee		144	600	244	300	Plant issue fee		122	130	122	130	Petitions to the Commissioner		123	130	123	130	Petitions related to provisional applications		126	180	126	180	Submission of Information Disclosure Stmt		581	40	581	40	Recording each patent assignment per property (times number of properties)		146	710	246	355	Filing a submission after final rejection (37 CFR § 1.129(a))		149	710	249	355	For each additional invention to be examined (37 CFR § 1.129(b))		179	710	279	355	Request for Continued Examination (RCE)		169	900	169	900	Request for expedited examination of a design application		Other fee (specify)						*Reduced by Basic Filing Fee Paid					SUBTOTAL (3) <span style="border: 1px solid black; 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SUBMITTED BY						Complete (if applicable)
Name (Print/Type)	Robert S. Mayer	Registration No. Attorney/Agent)	38,544	Telephone	(914) 681-8851	
Signature				Date	June 25, 2001	

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Fee Transmittal Form (1 page);  
Specification (36 pages);  
Drawings (9 pages);  
Appendix A (3 pages);  
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TELEGRAM APPENDIX A

```
decrest.m

function [Cxde, th]=decrest(X,NUM_CHAN)

z=20*log10(max(abs(X))/rms(abs(X)));
disp(sprintf('Baseband Peak to Average Ratio before decresting= %1.3f dB ',z));
%disp(sprintf('rms of the original signal %1.0f ',rms(X)));
%disp(sprintf('peak of the original signal %1.0f ',max(abs(X))));

amp=abs(X);
phase=angle(X);

if NUM_CHAN > 1
    fp=1.8e6;
    dec=6;
    th=rms(amp)*10^(dec/20);
    Be=firls(16, [0 fp fp+130e3 (1.2288e6*2)]/(1.2288e6*2), [1 1 0 0], [1 1e3]);
else
    fp=0.6e6;
    dec=4.1;
    th=rms(amp)*10^(dec/20);
    Be=firls(16, [0 fp fp+130e3 (1.2288e6*2)]/(1.2288e6*2), [1 1 0 0], [1 1e3]);
end

%disp(sprintf(' threshold %1.0f ',th));
%Decresting filter
Be=Be/max(Be);
Bx=zeros(16,1); Bx(16/2+1)=1;

%First stage Decresting
I=find(amp<=th);
Er(I)=0;
J=find(amp>th);
Er(J)=amp(J)-th;
%disp(sprintf(' rms of the peak signal %1.0f ',rms(Er)));

Er2=[Er(2:end) Er(1)];
Er3=[Er(end) Er(1:end-1)];
```

```

decrest.m
    % find the local peak

K=Find(Er>Er2 & Er>Er3) ;
E=zeros(size(Er)) ;
E(K)=Er(K) ;
E=E.*exp(j*phase) ;

E1=filter(Be,1,E) ;
X=filter(Bx,1,X) ;
X=X-E1;

k=find(abs(X)>th);
%disp(sprintf(' Number of peaks not decrested = %1d ',length(k)));
%figure; plot(filter(Bx,1,abs(Er))); hold on; plot(abs(filter(Be,1,E)), 'r--'); %plot( (filter(Bx
,1,abs(Er))-abs(filter(Be,1,E))), 'g--');

z=20*log10(max(X)/rms(X));
%disp(sprintf(' Peak to Average Ratio after first decresting= %1.3f dB ',z));

%Second stage Decresting
amp=abs(X);
signal
phase=angle(X);
% the amplitude of the signal

I=Find(amp<=th);
Er(I)=0;
J=Find(amp>th);
Er(J)=amp(J)-th;

Er2=[Er(2:end) Er(1)];
Er3=[Er(end) Er(1:end-1)];
K=Find(Er>Er2 & Er>Er3);
E=zeros(size(Er));
E(K)=Er(K);
E=E.*exp(j*phase);

E2=filter(Be,1,E);
X=filter(Bx,1,X);

```

decrest.m

```
Cxde=X-E2;

k=find(abs(Cxde)>th);
disp(sprintf(' Number of peaks not decrested = %ld ',length(k)));
%Figure; plot(filter(Bx,1,abs(Er))); hold on; plot(abs(filter(Be,1,E)),'r--'); plot(filter(Bx,
1,abs(Er))-(abs(filter(Be,1,E))), 'g--');

z=20*log10(max(Cxde)/rms(Cxde));

disp(sprintf(' rms of the error signal %1.0f ',sqrt(rms(E1)^2+rms(E2)^2)));
%disp(sprintf(' rms of the decrested signal %1.0f ',rms(Cxde));
%disp(sprintf(' peak of the decrested signal %1.0f ',max(abs(Cxde)));
disp(sprintf(' Baseband Peak to Average Ratio after second decresting= %1.3f dB ',z));
```